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HUMAN-ANIMAL RELATIONS IN PASTORALISM

Hugh Beach and Florian Stammler

Humans and Reindeer on the Move, this special issue of *Nomadic Peoples*, carries a challenging intent of purpose. It aims to give a state-of-the-art, comparative perspective of reindeer management spread around the circum-polar rim. Reindeer-related livelihoods encompass the topic in such diverse and multiple ways that movement becomes not only the overarching 'glue' of this special issue; it also invites us, together with the authors, to contribute theoretically to our understanding of the move. The title 'Humans and Reindeer on the Move' stands therefore for a theoretical framework in several dimensions. Movement of humans and reindeer is understood by the authors of this volume in multiple ways including the literal sense, namely migrations of pastoral nomads with reindeer, but also as the constant move between engaging with wild and domestic reindeer. Movement is also the transition from a Soviet planned economy to a market-oriented one, which finds expression in the movement of goods and gifts within various spheres of exchange. Finally, we can attempt to clarify the importance and essence of movement in pastoralists' minds, as compared with categories of mobility created by non-pastoralists. All these multiple facets are covered by the contributors to this volume, while we focus in this introduction on the move between what we will call symbiotic domestication in human–reindeer relations, and rationalisation leading to full resource use at the cost of intimate human–animal relations.

The contributions, all thoroughly grounded in fieldwork data, were carefully chosen to provide such a broad regional distribution. However, more than this, our reason for focus on reindeer-based economies and livelihoods was precisely to highlight important variables of significance in the study of pastoralism in general. We maintain that the human–reindeer relationship, or rather its various changeable relationships, pinpoint determinants of principle in the development and practice of all forms of pastoralism (and other human–animal-based partnerships or modes of exploitation). These principles might not be apparent through the study of reindeer systems of livelihood alone, but they certainly shine forth prominently there, because of the unique spread over wild, feral, and domestic conditions of the species *Rangifer tarandus*, and the many associations these different populations have with humans – it might well be that some of these *Rangifer* populations are exploited as objects of the hunt and others of domestic herding by the same people at the same time (see, for example, Ventsel, this volume). The reindeer–human connection thus brings together a remarkable laboratory for the study of key determinants in many of

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the most important human–animal interrelations, and, to our way thinking, explodes common analytical typologies.

Dovetailing with the above theoretical aspiration for this special issue is the intent to provide a much-needed update into circumpolar reindeer affairs. With the demise of the Soviet Union in the early 1990s, especially, the multitude of reindeer-based livelihoods and cultures has become open to anthropological study like never before. Increasingly over the last decades, northern ‘reindeer peoples’ have mobilised themselves according to all manner of nationally variable criteria of indigeneity and international protective conventions. Of further significance is the dramatic rise of encroachment of wild reindeer in Eurasia and caribou in North America on domestic reindeer operations that led to significant decreases in the populations of the latter, again challenging reindeer herders’ capacity to respond flexibly to rapidly changing natural and social environments. Therefore, several of the contributions in this volume (Ventsel, Gray, Finstad et al., Anderson) deal with the clash and sometimes the integration of reindeer hunting and herding. Besides occasioning the demand for empirical update, all of these concrete historical developments provide, through their variation, the basis for the theoretical speculations presented here.

Romantic notions of reindeer pastoralism as well as studies driven by pasture biology claim that the herders ‘follow the deer’ or that the deer ‘show the way’. Those who have actually joined a pastoral reindeer society know that this is a truth with major modification, for while they might at times follow the deer, this will occur basically when the deer are moving in the desired direction, and this direction has been dictated by the herders, very likely over generations, to become internalised by the reindeer themselves. Internalisation occurs to the extent that the deer do not acknowledge their movements as guided by human masters even while they adhere to the bidding of these masters as if purely their own. Historical circumstance or even unusual seasonal conditions have often forced herders to alter their old patterns of movement, placing their new desires in opposition to that of the herd which stubbornly adheres to the herders’ former desires. The so-called ‘pastoral cycle’ is therefore not merely a term which might flag a repetitive seasonally-based pattern of movement; there is another highly significant form of circularity involved in the communication between human and animal – the circularity of wills negotiating those of time and space. The herders follow the reindeer that follow the desires of the humans. Herders balance their decisions between the ‘species-specific’ needs of reindeer with their grazing connected to the distribution of plants on pastures and other ecological determinants, and the social needs of humans connected to boundaries, proximity of markets, infrastructure, population density, and economic activities other than reindeer herding. In short, we are dealing with what has loosely been termed ‘domestication’. But what is the true import of this vague descriptive construct? How are the dictates of herders internalised by the deer? Is it through internalisation that can be traced back

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genetically, determined by nature, or is it rather determined by nurture, by a kind of learned reindeer ‘culture’ passed down through the generations? If the exact pattern of timing and movement is not genetically programmed, as similar routes appear to be for some migratory birds (Droscher, 1969), might domestication imply some sort of genetic predilection, or predisposition to acquire such a humanly-dictated route? And why, in this mutual circularity of communication, should we be considering the domestication of the deer by humans alone rather than the domestication of the herders by the deer or the reciprocity of the human–reindeer relation as a whole? The concept of symbiotic domestication (SD) between reindeer and humans will form the kernel from which we spin a number of important analytical dimensions.

In his seminal work on comparative reindeer systems, Ingold (1980) has drawn attention to the opposition between protection (certainly a significant item of SD) and predation. In an earlier study (1976), Ingold had already introduced the concept of ‘predatory pastoralism’ whereby the deer are left generally unattended in a feral state, and the slaughter harvest becomes increasingly likened to a hunt. Other facets of SD involve control of the animals (e.g., intensivity of herding practices as applied by Beach 1981) or so-called ‘tameless grade’ (Ruong 1968), and intimacy of knowledge of reindeer by humans, and of humans by reindeer (Stammiller 2005; see Anderson, this volume). From the aspect of reindeer agency, SD most importantly implies the reindeer’s own inclination to seek human contact. The deer can benefit from human protection not only from predators, but also from insects. In times of grazing scarcity (or ‘lockage’, when the grazing exists but is rendered inaccessible to deer by the condition of the snow or ice cover), the deer can become totally dependant and most craving of human intervention to supply artificial fodder, stored natural fodder, or access to otherwise inaccessible natural fodder, such as beard moss growing on the upper branches of old trees.

Notable for the case of reindeer in the northern environment, and fundamentally different from that of animals in many other pastoral contexts, is that while they might indeed seek humans within a relationship of SD, they can survive often quite well without it. The same environment might host wild members of the same species, domestic members controlled in a system of pastoral SD, and even not-so-well-controlled domestic members, those that have become feral (see Ventsel, this volume). The relationship of SD which goes unexercised, for example through the ‘extensive spiral’ as described by Beach (1981), will quite rapidly draw deer into a feral state. The distinction between feral deer and wild deer proposed here therefore comes to revolve not merely upon the actions of the deer, but also upon the ability of the deer to revert to a relationship of SD should it become re-exerted. Feral deer are thus deer once under the control of humans that have ‘gone wild’ in a somatic, individual, sense, but which nonetheless possess the SD disposition – on the non-somatically learned level, i.e. on the level of a genetically inherited

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Figure 1: *Herder helping reindeer to get moss off the trees*

condition. There are two interrelated assumptions embedded in this terminology as used here.

1. Behavioural differences between wild reindeer and domestic reindeer stem not only from the variable somatic learning of given animals through their relations with humans, but are also very much biologically determined on a sub-species population level. These differences have been deliberately influenced/stabilised by humans for many centuries through selective breeding, with its most extreme form in the engineered breeding that included artificial insemination practised in the Soviet Union. Still the two, wild (on the North American continent, read caribou) and domestic, can mate and produce viable offspring.
2. While various degrees of trust might come to obtain between individual humans and members of wild species, this does not constitute what we mean by domestication which involves a genetically encoded result of many generations

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of significant inter-species relation. Thus while feral deer may join wild herds and will behave for all intents and purposes just as they, there is still a significant, although un-engaged dispositional distinction.

Obviously there is an evolutionary route through human interaction by which wild species become domesticated (or vice versa through the cessation of such human interaction), but, since this is a very long-term process according to our definition of domestication, the concept that humans might once have put entire herds of wild reindeer under their control and domesticated them 'en mass' within the deer's lifetime cannot be entertained. Anyone who has experienced it will recognise immediately the profound difference between a wild reindeer and a feral reindeer when it comes to attempting to assert human control. The difference is evident even in the case where a specific feral deer has never before been subjected to human control. Various languages of reindeer herders account for this distinction with different terms for domestic and wild reindeer (e.g. Nenets *ty – iliabts*). In short, while SD must be the result of learning, it is a learning which has become encoded on the meta level, with induced genetic structural change in the species over centuries through selective breeding. Domestication must therefore not be confused with the condition of tameness. Domestication, here as a term reserved for this meta, genetically-encoded consequence of human-animal relation, is irreversible for any individual animal despite its specific state of behaviour stretching along a broad continuum from great tameness to great ferality (which might coincide fully with the wild behaviour of the non-domesticated, wild, members of the same species).

Naturally the domestication process, especially when speeded by concerted selective breeding efforts has led to sub-species diversification beyond the wild-domestic dichotomy focused on here. For example, in Russia there has been official recognition of four sub-species (breeds) of domestic reindeer by the Scientific Council of the Soviet Ministry of Agriculture in 1982: the Nenets, Evenki, Eveny and Chukchee (Khargyn) breeds, named after the ethnic groups engaged in domestic social relations with them.

Ingold accounts for the rise of large-scale reindeer pastoralism through the diffusion of the social relations of production from the pastoralism of other species (1980: 23 ff). While his argument is well taken, it must not be forgotten that this diffusion must in itself be insufficient to explain the advent of large-scale northern pastoralism, unless the social relations of production under consideration were applied to reindeer stock pre-conditioned by the existence of relations of symbiotic domestication with humans. This domestication in deer must already have been won, the result of generations, and most certainly derived from the holding of small numbers of animals for transport purposes. This topic had been a favourite of early twentieth-century German-language ethnology and the example of reindeer contributed greatly to the diffusionist

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Figure 2: *Guarding the herd in Samiland*

debates about the evolvement of domestic animals and its implication in general (Hatt 1919, Flor 1930[NIR], Menghin 1931[NIR], Vajda 1968[NIR], Wiklund 1918). While domestication and small transport herds are a phenomenon reaching back at least several thousand years, the advent of large-scale reindeer pastoralism, i.e. applying domestic relations and selective breeding to large herds for production, reaches back not more than four or five hundred years. The latter has fundamentally changed human existence in the North and has also been called ‘reindeer revolution’ (Vitebsky 2005[NIR]), ‘radical innovation’ (Ingold 1980: 105), and ‘the most important turning point in the cultural history of the native peoples of the Eurasian Arctic’ (Krupnik 1993: 160[NIR]). The answer to the issue pondered so diligently by Wiklund, Hatt and others decades ago, whether large-scale ‘whole nomadism’ derived from the taming of entire wild herds or the more gradual expansion of transport stock, might have been deduced from the armchair had they had a full grasp of the nature of domestication and its essential role for the pastoral condition.

Rather than consider the structure of human social relations of production for the derivation of reindeer pastoralism, we wish to investigate more fully the nature of the human–reindeer relationship, most importantly how the people involved have come to conceive of it. As the articles in this collection so well demonstrate, belief systems vary, are currently undergoing major changes and are also highly determinative of the way the same people deal with wild, feral and domesticated members of the same reindeer species.

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SD implies far more than the circularity of human and reindeer wills resulting in domestication as witnessed in mutually reinforced patterns of movement. This is rather but one concrete expression of an animistic world view wherein, again, human and animal 'persons' are conceived as equals in reciprocal, symbiotic relationship, not only for their movements in the landscape, but also for their very sustenance and reproduction, their life and death. Here, too, Ingold's work has been groundbreaking. In *The Appropriation of Nature* (1986), Ingold has complemented his previous (1980), more economically-oriented study of basic structural differences in the nature of resource property and the practices of hunting, pastoralism, and ranching by focusing also on belief systems. Ingold points out the reciprocity between humans and the spiritual masters of the deer. It is the latter who sustains humans with food, while through the act of killing the deer, humans reciprocate by releasing the spirit of the deer to become reborn, thereby ensuring the reproduction of the animal species (Ingold 1986: 250 ff). Already in the earlier work, however, Ingold had speculated about the ritual inversion of animal presentations in relation to the spiritual master of the deer when comparing the case of hunters and herders.

In the hunt, a presentation of animals is made by the spirit to man; in the sacrifice, men present animals to the spirit. In both, the shaman intervenes as propitiator, 'calling' the spirit to *send* animals to the hunter and to *accept* animals from the pastoralist. (Ingold 1980: 283; cf 1986: 241ff.)

Ingold speculates also that both kinds of animal presentation in different directions might occur concordantly by the same people engaged both in hunting and herding of reindeer. It is evident that he believes that this ritual inversion or bi-directionality of animal presentation need not imply any other major discrepancy in the animistic belief system of reindeer hunters and pastoralists. Indeed, it would seem strange otherwise, especially with the same people engaged in both hunting and herding practices, and Ingold is surely correct that the transition from hunting to large-scale pastoralism, a change involving two very different modes of relating to the reindeer, and which could not have occurred overnight, could nonetheless entail no major shake-up of the animistic belief system he has described. Of course different modes of belief and new religions of salvation can diffuse as well as social relations of production, but these do not necessarily eradicate all tenets of animism, the basic concepts of respectful reciprocity between humans and the spiritual masters of animals. Essential to this mutual respect is non-wastage of the animal master's gifts and the proper promotion of the reincarnation of the spirits of the animals gifted to humankind in the flesh. Nonetheless, even if the tenets of respectful reciprocity between animals and humans might span the hunting-pastoral dichotomy, they also might not. Why not and how not are matters of prime concern to this special issue.

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Figure 3: *The 'master of the herd' spiritual bull in a Nenets chum – respectful reciprocity between animals and humans*

While the maintenance of respectful reciprocity between humans and animals is the norm which (within this world view humans consider) both humans and animals seek, this is not to say that each party might not at times come to stray temporarily from this moral path. Moreover, disharmony (if we are to acknowledge human mythological accounts and legends) is not necessarily initiated only by human agency, human greed. Animal Masters, notably their so-called 'trickster' representatives whose moral character is not so steadfast, are often credited with igniting spiralling currents running counter to harmonious reciprocity among humans and animals as well as among the different Animal Masters. We know that crows and coyotes, typical tricksters, frequently demonstrate less than noble characters in their inter-species dealings and by extension their intra-species dealings, just as we know similar moral lapses to occur among ourselves. Relations among the different animal species are conceived as following (albeit with lapses) the same morality of reciprocity, or rather; the relationship between humans and other animal species is but one case of this larger scheme, composing a holistic ecological morality.

Much has changed, however, since the early development of large-scale reindeer pastoralism, and current realities challenge the reasonable unified base of animistic beliefs and reciprocities surrounding both wild and domestic

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reindeer. While the historical reconstruction of old animistic belief systems regarding the reindeer may have been accurate in the portrayal of a hunting/herding unity, today one can encounter extraordinarily different attitudes toward, and treatment of, domestic and wild varieties of the same reindeer species. As the papers in this volume show, there is a wide range in the mutual practice of SD (or near total lack of it) between humans and domestic reindeer and also a wide range in the treatment of wild reindeer. Moreover, the two can vary quite independently among the same people today, so that a high degree of SD demonstrated with domestic reindeer stock is accompanied by little if any respect for the hunted wild reindeer. With so much variation at hand, it is tempting to seek explanatory patterns.

A dominant force running counter to the animistic, holistic ecological morality traced above is nothing less than what we conceive of as 'sustainable development' when brought to its logical conclusion by 'rationalisation', that is, the particular (often but not necessarily 'western') human brand of ecology, by which ecological efforts become dominated by human purposiveness. Let it be said from the outset that the survival of human groups does not always demand the tightening noose of rationalisation. There are groups which in many ways can enjoy more choice than others and whose own human-group purposiveness might, therefore, follow the course of symbiotic domestication in relation to fellow animals and maintain a less human-species-centric ecology. Yet, the need to rationalise is not something which can always be sidestepped by cultural choice. Its imperative slumbers in all human groups and will wake not only in times of externally imposed resource depletion, but also in tune with the success of their own expansive sustainable development. Rationalisation is the prescriptive ideology that one should use resources fully in order to provide the greatest benefit to users (humans) as long as one does not thereby endanger the continuation of this process. Logically, wastage, according to the precepts of rationalisation, becomes synonymous with *not* being utilised for human benefit if it could be, without injuring sustainability. It is wastage if a deer which could be killed, without injury to the sustainability of the deer species, is not killed for the benefit of humankind. It is against the precepts of rationalisation if grazing is not utilised (sustainably) which could have nurtured that reindeer. If 'sustainability' means do not over-use, 'rationalisation' means not only do not overuse, but also use maximally up to the ceiling of sustainability. Rationalisation becomes the unavoidable logical outcome of sustainable *development* (as opposed to sustainable *use*), since it imposes no constraints limiting the expansion of the user category (humans) itself.

Rationalisation as a logical conclusion to sustainable development is also given emic support by practitioners. Russian use of the terms illustrates the connections between the two. There *ustoichevoe razvitie* (sustainable development) is often seen as identical to *ratsional'noe prirodopol'zovanie* (rational

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nature use). In Russian the *ratsional'noe* use implies firstly a 'no waste' ideology. No waste is seen as good for the environment and for its human users. However, added to the concept *ratsional'noe* and no waste is also the idea of using available resources as fully as possible. Leaving resources unused is considered a waste. Therefore, Soviet agricultural administration imposed fines not only for overgrazing of pastures, but also for undergrazing. In this respect Soviet and western ideology both work with identical concepts and goals.

Under the precepts of rationalisation, the continuous maximally sustainable benefit to humans thereby becomes (it is assumed) at least not negative for the survival of the resource base. Yet, is maximal sustainable resource use as implied in development models compatible with the preservation of the resource base for the future, as implied in sustainability models? And is this process fully reciprocal, in other words is the goal of sustainable benefit to humans necessarily the same as being beneficial to the members of the other species forming the human resource base? Certainly not; nor was sustainable slavery within our own species beneficial to slaves. The concept of no wastage is embraced in both animistic ecological morality and the ideology of sustainable development. Note, however, that in the latter case it operates mainly on a generic level, for example, the species level, with linkage only to the composite consumption (including wastage) of individual animals. It is not regulated, as in the former case, through symbolic or informational links inhibiting human excesses as perceived by humankind in relation to the respectful or wasteful treatment of an individual animal. For example, it is not buffered by the determinations and retributions of any Animal Masters who might take offence at *how* a *specific* animal is used or wasted.

Even in cases where Animal Masters do not figure consciously in the minds of herders anymore, as among many northeast-European reindeer herders, they still feel how a certain inherent ecological morality is violated by rationalised, market-oriented reindeer production.

Yes, we like the clean technology and the good working conditions here, but they produce too much waste. We have to throw away all the bones and meat in smaller pieces, because they say the cost of processing them is higher than the market price, it's not profitable for them (*ne vygodno im*) and not worth the work (*ne stoit rabotat'*). But we can't just let go all this valuable raw material. We return in the evening and keep working. We make our own minced meat and little pieces for frying from their 'rubbish'. (Vasilii, herder from the Nenets Okrug, Toivoniemi, autumn 2005)

It was this waste of resources that astonished most a group of herders, who came from Northwest Russia for training in EU slaughter technique in northern Finland. The interview took place during a delicious dinner made of 'waste' reindeer meat that Vasilii had prepared.

On the spiritual level, the moral imperative of rationalisation obviates the role of the Animal Masters. It is no longer they who give freely or perhaps

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withhold whimsically; it is we who take according to our own ecology. *Our* ecology, even if supposedly sustainable, is dramatically distinct from any ecology dreamed of as universal or abiding to the holistic morality of equity among the purposive 'needs and greeds' of all species.

Another useful concept generated within this context is that of flexibility. Flexibility from a systems perspective can be approached in many ways. It might be regarded as the realm of somatic change available to an individual organism or self-regulatory circuit within the given structural confines of its genetics or prescribed upper and lower limits of homeostasis. Flexibility might also be regarded in relation to the concepts of sustainability and rationalisation. In that case, flexibility can be defined as the realm (of usage) between that which is minimal for survival and that which is 'rational' (used here in the sense of complying with the aims of rationalisation), in effect, the realm of sustainability. The greater the flexibility, the wider is the range of states at which a system can be maintained; the narrower the limits of flexibility, the narrower is the range of states. Given steady rates of use or growth of a variable bounded by that range, and given similar points of transition as this variable reaches upper and lower limits, the higher the frequency of shifts between extreme states as the flexibility range narrows (see Beach 1981: 480).

To concretise within a herding discourse: as the number of reindeer increase on limited grazing lands, flexibility is reduced (if all deer are to survive), and grazing must be utilised with ever increasing rationality. Or, as the number of herders increase, they will be able to maintain the same standard of living (assuming it is meat-production dependent) with the same limited reindeer stock only if they rationalise its production of meat, for example through selective breeding and carefully controlled age/sex composition. Of course the various systems of relation are interlocking, the consumers (reindeer consuming plants) in one instance becoming the resource to be consumed (humans consuming reindeer) in another, and hence the pressures induced through strained flexibility in one relation will apply immediate pressure to other relationships within the total system. For instance, another means for the rising number of herders to maintain the same living standard is for them to increase their herd stock, not only rationalise the use of existing stock. This, in turn, will narrow the flexibility of the herd's relation to limited available grazing. Here too rationalised use of the grazing might be applied, and the whole outcome will become geared toward maximising the production of reindeer meat per unit grazing (for example by calf-slaughter).

We know this discourse of increasing efficiency in animal husbandry production from other regions and contexts worldwide, and cultural ecology has produced in the 1980s a whole range of analyses of various pastoral systems, focusing on measuring the efficiency with which different pastoralists through their husbandry activity convert plant energy to animal energy. Using this unified system of measurement, completely different societies, using different animals

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and grazing systems on different continents became comparable (e.g. Ellis et al. 1979, Coughenour et al. 1985). The problem with this comparability, however, lies in the core of the approach. Measuring grades of efficiency produces a ranking order of societies that lets some look more 'advanced' than others, ignoring most other cultural variables of and ways of adaptation of humans and animals to a particular natural and social environment (see Moran 1990).

The problem of increasing herds or herders and scarcity of pastures is pressing so far only in the Fennoscandia and the Yamal region of West Siberia within the circumpolar reindeer herding region. In all other parts of north-eastern Europe, Asia and North America, the problem is quite the opposite. Numbers of herders and herds have drastically decreased for various reasons (Krupnik 2000[a or b], Stammer 2005: 66–71, 240–42), which several of the papers in this volume analyse in more detail (Anderson, Gray, Finstad et al.). This drastic decrease – in Russia to half of the overall Soviet reindeer headcount – led the discourse away from efficiency measuring, towards a rhetoric of cultural values and preserving the heritage of reindeer herding as a way of life. At the other extreme, that of highly stressed flexibility as in Fennoscandia, the rhetoric of discourse dwells naturally on efficiency/rationalisation of the reindeer livelihood with the additional call to safeguard the survival of small indigenous peoples with the help of international covenants. The more flexibility stress comes to permeate wider relations in the system, the more the discourse is combined with ecological concerns reaching beyond mere herding and grazing, since maximised sustainable herding is seen to encroach on the sustainability of forestry, environmentalists' delight in sustainable predator populations and tourism's desires for untouched 'wilderness' (Beach 2001, 2002, 2004; Dahlström 2003[NIR]).

As noted, not all pastoral reindeer systems are trapped within market realities which generate such a stringent and inexorable developmental logic. Yet greater flexibility ranges for certain variables does not necessarily mean comfort and a lack of motivation to change. Certain herding groups may bear the dubious blessing of great flexibility in sustainable reindeer herd size due to high mortality rates limiting the increase of herders and their resource needs; their grazing lands may be vast and lightly grazed and their resource needs might be met without necessitating further growth of herds, as now is the case in regions reaching from the Kola Peninsula in the West, through Nenets District, Taimyr, Sakha (Yakutia) to Chukotka on the Bering Strait. Yet, this might be due to their severely limited ability to store wealth and gain access to commercial commodities.

Where flexibility in resource/consumer relations becomes stressed, however, and humans are a part of the equation, their purposive agency might swing anywhere from raw, destructive non-sustainable exploitation to the supposedly sustainable variety of resource use driven to maximisation by the precepts of rationalisation. This is a spectrum not between the destruction of

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Nature and the preservation of an ecology devised by God, a pristine Nature. Rather both are grounded in principles which yield a totally human-centric driven Nature, one which when taken to the extreme of 'non-wastage' will screw all resource/consumer relations to the brink of commons tragedy (even if not necessarily by the route of commons dilemma).

Actually, 'wastage' is a 'time/species-centric' term from an ecological perspective. There is really no such thing of itself. It comes into existence only when related to a purposive user. Otherwise it is potential use to ourselves as flexibility in the future, as resource under active use by those entities whose existence we hardly credit (slaves, bacteria) or by users not yet evolved (future time flexibility).

It is an attractive distinction to observe that maximal resource use, or rather its more wholesome brother, rationalisation, which bows to use under sustainability ideals, is surely different from optimal resource use. If rationalisation implies maximising sustainable use for the fullest benefit of one component of the system (like humans), optimising might stand for balancing the best possible sustainable benefits for *all* components of the system, here humans, animals, plants, the physical, social and spiritual environment. One might then argue that if one were to adhere to an ecological morality based on optimal, multi-component sustainability rather than maximal-but-sustainable, single component-centered use, we would achieve the basis of a true ecology. As noted, the concept of optimisation is attractive in that it leads one to maintain a faith in human-ecological interventionism with the idea that we are doing God's bidding. While this might indeed be a step forward, we would nonetheless still face serious problems. Optimisation for sustainable best possible benefits for all components necessitates that we humans would unavoidably know not only what is best for any given member of a species but also at what proportions the myriad of species should be allowed to flourish. Mankind would thereby be harnessed to 'play God' not only for the human purposiveness of human benefit alone but also for God purposiveness as seen and enacted by human proxy – surely a dangerous recipe! Arguably, by contrast, 'survival of the fittest', the system left to fend for itself, in all its most brutal forms is nothing less than the negotiation among user individuals and species components of what is to be considered 'wastage.' An uneaten reindeer is wastage to a wolf – not killing what one could kill – not evolving to kill what one might kill. Yet humans, too, are a part of the system, and we can and must struggle for our survival. Doing so is also not merely for our benefit, although it is equally and maybe exceedingly to the detriment of others. The distinction between targeted rationalisation and a more generous optimisation in the end appears rather spurious; humankind is saddled by the same dilemmas of knowing *how* or even *if* it is possible to act ecologically.

Leaving the more philosophical aspects of these arguments aside, we can nonetheless propose an analytic perspective informed by the intersection of

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two axes, the one pertaining to human–animal relations, and the other pertaining to flexibility or pressures toward rationalisation. The first axis will range from intense SD to its absence in predatory, non-reciprocal hunting. The second axis will range from resource/consumer relations of low stress, great flexibility to those of high stress, intense rationalisation or non-sustainable use. The purpose of this approach is definitely not to sort our case studies into a scheme of typological classification. In fact, we believe that much previous research focusing on typologies – no matter of which kind – is in danger of essentialising pastoral forms to an extent that does injustice to the complexity of variations and interrelations between the interplay of determinant factors. Much Russian research on reindeer herding has focused so much on distinguishing various herding types or systems practised by ethnic groups, that connections and similarities are rendered invisible (e.g. Bogoras 1933[NIR], Vasilevich and Levin 1951, Yuzhakov and Mukhachev 2001; see Dwyer and Istomin, this volume, and discussion in Stammler 2005: 52–55). In fact, even Ingold's classificatory work of hunting, herding and ranching (1980) or on one- or two-dimensional land tenure (1986: 130–64) bears that danger of being interpreted in an essentialist way (see discussions by Layton et al. 1991), and generalisations based on this have been countered with different ethnographic evidence (Jordan 2003: 232–52, and Stammler 2005: 165–204). Incidentally, Ingold himself would not subscribe to putting livelihoods into pre-classified boxes, even though his work might be used for this purpose (Ingold, pers. comm. with Stammler, September 2004).

While Beach exposes the flaws of the typologies encountered in reindeer herding terminology (1981: 499–510) and has concentrated in his study on the interplay of determinants, he regards the two approaches as connected and with variable validity depending on conditions. If typologies are to be meaningful to the understanding of the pastoral system and more than a mere system of ordering for reference, they must reflect significant causal factors, including perhaps strong cultural norms of practitioners, and not just the analytical distinctions of cataloguers. These norms can in themselves become determinants of herding form when flexibility allows one to act as one wishes rather than as one must. In short, the more the limits of flexibility for a pastoral system are narrowed, the more rationalisation is invoked toward its single-state, maximised-but-sustainable ideal, and the greater non-cultural determinants gain sway over the herders' cultural norms. The frequency of shifts in herding practices, as determinants reach upper and lower limits, must then be related to a herder's life span and enskilment for the equation of what this person might come to regard as normative (Beach 1981: 481). This volume bears witness to a considerable mix of analysis invoking historical-period or ethnic-based typologies on the one hand and determinants on the other. Neither approach is totally right or wrong *per se*; any mix is conditioned by relation to the field described, but there is a real danger in adhering to an approach

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which is totally incongruent to the realities of current and changing conditions in a particular field.

Note, however, that the decreasing utility of what we describe here as historical-period or ethnic-based typologies of herding form should not be confused with the kinds of analytical distinctions devised to deconstruct complex behaviour into more independent elements to be applied precisely cross-period and cross-culturally. For example, Paine's early distinction (1964) between herding and husbandry as co-elements in reindeer herd management, even if fuzzy at some edges, has proven to be of enduring usefulness. Paine demonstrates the importance of this distinction not only to herd management practice but also to pastoral social relations in his classic work *Herds of the Tundra* (1994) and its sequel *Camps of the Tundra* (forthcoming).

We suggest the use of the perspective of two axes as vectors to aid our understanding of dynamic processes of change. We believe that these vectors when applied to both reindeer herding and reindeer hunting societies (and their combinations) are revealing when correlated to modes of belief. Our purpose is not to distil the structural essence of herding as opposed to hunting, but rather to note similar forces working in each of these livelihoods, at times spurring similar trends and at times forcing them into combined livelihoods or at times placing one in opposition to the other.

From this perspective, hunting, which is certainly a predatory activity, must nonetheless be recognised as encompassing a variety of human–animal relationships of belief which do not necessarily class it merely as predatory, but as Jordan (2003: 282) and others have argued, it is also very much a reciprocal action. The hunters can regard themselves as engaging in animistic symbiotic reciprocity with their game. And reindeer pastoralists whose animal stock has an inbred domestication culled forth through generations of SD, might nonetheless engage in a form of herding which is distinctly predatory and abusive to the SD heritage and current potential in their livestock. In 'predatory hunting' the basic essential option for agency of animals is simply to get away. In 'symbiotic hunting', the animals, through their Masters, have great agency in deciding who is worthy of the gift of the catch. Hence, the concept of 'social capital' can be applied to the social relations between animals and humans just as it has been applied to those between humans. Similarly, in the pastoral livelihood, much social capital can be invested in the relation between the animals in the herd and their herders. Anderson (2000) has shown this reciprocal relation of taking and giving between both hunters and herders in Taimyr, stressing the agency of all beings in the environment. However, the social capital between species is an intimate partnership built over time, which can be reduced radically with the move toward rational herding. The move from symbiotic relations to rationalisation relations is characterised by informational loss¹ and can occur relatively quickly; it is a far more difficult process to move in the other direction, from rationalised

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predatory 'animal handling' to symbiotic pastoralism (Beach 1981: 155). The rationalisation process whereby animals are both assumed to be and also are treated as dumb beings, devoid of cultural capability, mere robots of instinct, forms a self-fulfilling prophecy. The assertion of an ecology devoted to human purposiveness appears all the more justifiable to humans as they strip their former symbiotic partners of their cultural capabilities and their animistic equity with humans as beings of similar ilk.

Yet this transformation of the human-animal relationship, one which structures the relationship of humankind to its world, its philosophical appreciation of its position in the world, might not change with the facility of economic flexibilities and rationalisation pressures. Just as the reindeer herd which has been relocated to a new grazing route will try to re-assert the old pattern, so is it natural for herders and hunters brought up within the partnership of SD with animals to seek to preserve it. In another well-defined and isolated sphere of human-animal interaction, in the keeping of household pets, we can still acknowledge and indulge our mutuality with other species. Herders operating under pressures of high rationalisation are often still upset when handing their animals over to the impersonal market. When made to execute massive slaughter procedures of the reindeer themselves, some herders will habitually drink themselves into a 'wild' state. Perhaps in this way they are acknowledging their symbiotic relationship as they violate it, for they feel their actions to be counter to the partnership of SD, and they would rather not feel responsible for them. Subsistence slaughter, where every part of the reindeer participates in close personal and social utility, elicits no such trauma; yet to these herders the large-scale slaughter of reindeer for the market, for money rather than subsistence, and where the usage of the 'product' is released to the uncertain morality of those beyond the partnership, is a betrayal of the relationship. It is in effect the immoral slaughter of their own 'pets' (and guardians²) at their own hands.

Still, we are forced to acknowledge and to emphasise that these sets of human-animal relations, in spite of their opposite characteristics, are not at all mutually exclusive. Herders can act simultaneously within what Anderson (2000) called a 'sentient ecology' and rationalised market relations. Therefore they can treat reindeer in the same herd as beings with souls and ties to the spirits today, and as meat on the hoof tomorrow when they bring them to the commercial slaughterhouse for sale. As Stammler (2005: 173–76) shows for the Yamal-Nenets, the distinguishing line between the two sets of relations is the sphere of exchange in which the relationship is enacted, and these spheres exist simultaneously one next to the other. If slaughtered in the domestic sphere for subsistence, the action and the animal stay in the universe of social relationships among people and between people and spirits. If sold to the market, they lose the links to this universe and get transformed to figures of slaughtering weight, veterinary characteristics and meat prices.

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Among other things, advances in the possibilities of storage, especially in the storage of food in the form of money in the pocket or bank rather than animals in the herd on the tundra, have opened subsistence livelihoods to a commonly insatiable market. Logically congruent with this development is the possibility for increased rationalisation of production, and the unfortunate corollary to that is the unending need for it. Rationalisation is the handmaiden of the market, and nothing blows apart personal relations of reciprocity so effectively, be they between humans or between humans and animals, as rationalisation.

The broad theoretical framework involving various kinds of human–animal relations, reaching from symbiotic domestication through to the relations of predation and rationalisation, figures in one way or the other in all the contributions to this volume, which also share a common focus on the importance of movement in its numerous dimensions. In the following, we shall introduce this topical relatedness in an excursion through the main focal points of the papers across many of the regions of the circumpolar rim, starting in Alaska and ending in Norway (see Figure 4).

While, historically, *Rangifer tarandus* was domesticated only in Eurasia, since the twentieth century we find both domestic and wild forms in all continents of the Arctic. In Alaska, reindeer herders in 1927 had herds numbering 127,000 animals (Finstad et al., this volume). Now they are struggling to preserve the last herds against wild reindeer of the Western Arctic Caribou Herd which is sweeping into the Seward Peninsula, overrunning the pastures and carrying away the domestic stock. Finstad et al. analyse the implications of this growing threat by caribou to Alaskan reindeer herding, stressing the cultural and emotional ties that Native Alaskan communities, herders and non-herders alike, have been developing over the last century to the herding lifestyle – originally the combined result of domesticated breeding stock brought over from Chukotka and herding teachers, mainly Saami, imported from Fennoscandia in the late 1800s. Saami families have also come to herd in Canada, and Canada's largest domestic herd, around the McKenzie River delta in the Northwest Territories, was largely seeded by domestic Alaskan stock. Greenland, too, hosts some small reindeer herding activity.

Wild reindeer have also increased in numbers in neighbouring Chukotka, once the No. 1 Soviet reindeer herding region with 600,000 animals. There, however, the reduction of the domestic reindeer population to 120,000 was very much connected to the sudden end of Soviet support for reindeer pastoralism and resulting economic and social uncertainty. Gray illustrates the problems and pitfalls of this process in her paper based on her personal field-work impressions over more than ten years, arguing that Chukotka, with its most intensive Soviet past and the remnants of it still lodged in the post-Soviet bureaucracy, carried a unique heritage after the end of the Cold War.

Neighbouring Chukotka in Eurasia, the Sakha Republic is populated by both wild and domestic reindeer. The number of domestic reindeer there had crashed

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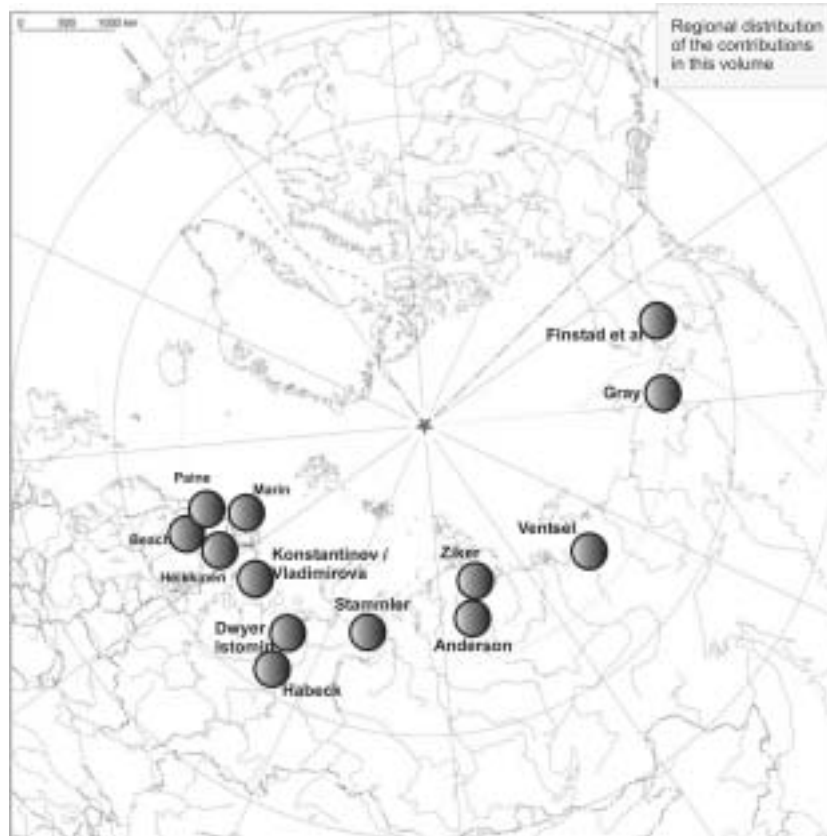


Figure 4: *Regional distribution of the contributions in this volume*

in the 1990s from 380,000 to 180,000, but Ventsel describes in this volume, how herders combine the herding of domestic with the hunting of wild reindeer into a single livelihood. It must be emphasised that there are hardly any cases of ‘pure’ reindeer economy. Reindeer is rather a central resource within various complex economic settings that combine herding, hunting, gathering, fishing, trading and wage-labour in almost infinite variations across the circumpolar rim.

West of the Sakha Republic in central northern Siberia (Evenkiia and Taimyr regions), herding domestic reindeer had already lost its quantitative significance before the end of the Soviet Union. However, Anderson (like Gray) shows that this does not entail the end of the cultural importance of reindeer for humans. Anderson describes how the approach of humans to their environment is thoroughly governed by the principle of intimate knowing that is typical for what we call symbiotic domestication (SD) in the theoretical part

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of this introduction. At the heart of this relation are the principal skills of engaging with reindeer in an intimate way, skills which remain intact in Siberia, and form – as Anderson argues – a unique adaptive capacity of herders after the demise of the Soviet Union. In his paper about the Dolgan and Nganasan reindeer hunters of Taimyr, Ziker shows how the fall of the Soviet Union led to a tendency quite opposite to rationalisation, namely the resurrection of non-market exchange networks based on kinship and sets of values reaching far back into the pre-Soviet nomadic pasts of the Dolgan and Nganasan. The movement of reindeer in these networks – be it as live objects of exchange or in the form of meat in systems of generalised reciprocity – is also documented to be of major relevance among Nenets herders of the Yamal district (Stammler 2005: 171–205). This region in West Siberia is, with 550,000 domestic reindeer, the world's No. 1 reindeer herding region and the only one with significant herd growth since the end of the Soviet Union.

Bordering on Yamal, West of the Polar Ural mountains, live the Nenets and Komi reindeer herders of northeastern Europe with herds of domestic reindeer numbering approximately 230,000 animals – the focus of the papers by Habeck and Dwyer and Istomin in this volume. These two contributions about the same region take different theoretical positions. Dwyer and Istomin explore the implications of certain herding form types when confronted with current conditions. Using a set of four different factors including patterns and frequencies of movement, they categorise along ethnic boundaries reindeer herding of the Komi as being different from that of the Nenets. They argue that since, under Nenets, herd form herders are more likely to lose track of their animals, Nenets herds are more vulnerable than Komi herds to infectious diseases. Habeck, coming closer to concepts related to what we describe as symbiotic domestication, encourages us to think about the very essence of movement in Komi pastoralists' minds and their conceptions of their surrounding human environment. While planners, geographers and administrators use mobility as an analytical term to help achieve efficient spatial organisation and full resource use, Habeck emphasises its importance for the practical experience of herders who in migration embark on a process of 'enskilment', gathering experience through movement and developing intimate relations with the land and all its components. Habeck adheres to phenomenological theoretical approaches, most prominently Ingold's *Perception of the Environment* (2000). This interpretative school of thought, which became prominent among scholars of the 'anthropology of landscape', focuses on the importance of the environment and the land for humans beyond the more practical and economic dimensions of rationalisation and sustainable development. Taking 'the agent-in-an-environment rather than the isolated, self-contained individual as a point of departure' Ingold (2000: 171) emphasises reciprocity and interaction in human–environment relations similar to what has been described here as symbiotic domestication in human–reindeer relationships.

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Northwest of the Komi and Nenets reindeer herding area is the focus of Konstantinov and Vladimirova's paper on the Kola Peninsula, where reindeer herding is ongoing with approximately 60,000 reindeer. With impressive detail they illustrate the social negotiation, or transfer (movement!) of reindeer property in the condensed and intimate setting of the working chamber in the slaughtering corral. Here we find another kind of symbiosis, that between the old cooperative with collective reindeer assets and its employees, private reindeer owners, who convert collective deer into private deer. Informal networks, be they based on kinship or kinship-like relations ('para-kinship'), are essential for the privatisation of reindeer. Similarly, John Ziker's paper about Taimyr shows how the same factors prevail in both reindeer hunting and herding contexts. However, while Ziker emphasises the return to pre-Soviet practices in reindeer exchange, Konstantinov and Vladimirova see the relationship of humans and reindeer very much in the light of enduring Soviet tradition, which herders and cooperative managers on the Kola Peninsula have creatively maintained as a deeply embedded socio-cultural trait.

Heikkinen's paper moves the focus westwards over the EU border to Fennoscandia, where roughly 200,000 domestic reindeer³ are herded in each of the three countries. Heikkinen describes in great detail the transition of reindeer herding in Finland under the pressure of rationalisation, which has increased in particular after Finland's reindeer herding became subjected to EU agricultural regulations after 1995. The author describes the herders as 'active conformists' and analyses how rationalisation pressures call for adaptive strategies in realms generally considered to be (or in some countries even legislated to be) outside the permitted reindeer herding livelihood. To improve their economy, herders have increasingly turned to opening their own small, family-based meat processing plants.

The tragedy of increased encroachment, decreased agency of herders and loss of flexibility is also the focus of Marin's analysis of northern Norwegian herding. Similar to Paine (1992[NIR]) and others before, Marin argues that the technocratic natural-science-shaped policy of the administration had negative effects for the pasture resources, ignoring practical decision making, let alone history and culture of reindeer herders. Traditional Saami methods of grazing allocation permitted grazing borders to be permeable, so that pastures could accommodate a nearby group in need, even if the land was not consigned to them. Herding authorities, however, see all grazing shortage in terms of a competitive 'commons dilemma' scenario. The supposed solution is to create strict borders, strict rules of access and strict reindeer quotas. Marin calls instead for the empowerment of the herders with their intimate knowledge of the land and its capacities.

Paine's interview of Ole K. Sara, one of the chief architects of Norwegian herding policy and himself a Saami, closes off this collection. Here we find exposed the brutal facts of rationalisation policies, as the need to improve the

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herders' living standards comes to exclude many of them from their livelihood and culture. (Fewer mouths to share the cake means better living standards for those left who do.) Importantly, however, we are made aware that these dire policies are not necessarily fashioned by 'wicked little bureaucrats' unconcerned with the fate of a small, powerless minority. Rather we come to appreciate the honest sincerity and caring of this policymaker called upon to make tough choices from among dismal alternatives.

The decline of what we have called symbiotic domestication in human–animal relations seems to be the inevitable outcome of growing rationalisation. Rationalisation is never an 'intransitive' concept; it requires an object, a resource/consumer relation to be maximised sustainably for something or someone's benefit. Hence the political aspect of ecology (in broad terms involving species as well as societies) is inherent in its very concept. There are those empowered to assert policies of sustainable development and those who are not. The ecologically sustainable states different protagonists wish to prioritise are not necessarily identical, and there never was, nor could there ever be, any single true ecological Eden out there, but only the resulting rumble of self-centered purposive wills surviving at least sufficiently within the larger system which in turn is sustainable enough to survive now. Since those empowered sufficiently to chart the course for rationalisation are not necessarily those 'who' rationalisation policies are claimed to benefit – the weak have always been made to comply 'for their own good' – one can with justification speak of 'eco-colonialism' (Beach 1997, 2004), in our times commonly a western phenomenon. Yet, as we have come to realise, not all policies are completely selfish, not all ecology designed to be eco-colonial. Nor are selfishness and eco-colonialism only negative, devoid of merit or outside of Nature.

However, patronising policies, no matter how enlightened or well-intended, are no substitute for a healthy degree of self-determination. To protect their pastures and to assert their agency, reindeer herders have joined forces globally. Within the last fifteen years links, contacts and joint efforts among reindeer herders from regions all around the circumpolar rim have been increasing, and the World Reindeer Herders' Association has been founded to coordinate joint activities. Prominent members of the WRHA realise that they have to talk in western terms if they want to be heard in their efforts to defend their increasingly scarce resources (Turi 2006).

The contributions to this volume show that presently we do not find rationalisation of reindeer livelihoods at every turn; we also find several 'bastions' of symbiotic domestication in reindeer management, and the continuation of this intimate human–animal relationship has even gained strength in places after the slackening of the rationalising pressure on reindeer herding in the Soviet Union. Of course, we as anthropologists carry sympathies for the peoples, cultures and livelihoods which have 'domesticated' us. We wish to see them sustained despite the threats of industrialisation, tourism or forestry.

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Yet these same threats can also provide greater flexibility to herders in other ways. May our herding friends forever have the means to live as they wish, and not merely as they must.

Notes

1. Rationalisation practices, such as the slaughter of the main part of the male calf generation in order to take advantage of the growth intensity of younger animals (more meat produced per unit grazing consumed), tend to eradicate the transmission of culture among reindeer and inhibits formation of the symbiotic relationship with humans.
2. In modern urban society, the keeping of household pets does not always establish a symbiotic relationship between animal and human, and even when such a relationship of mutual dependency exists between individuals (e.g. with seeing-eye dogs and 'watch dogs'), this is not conceived of as a partnership with a species. This aspect of such a relationship survives today in the role of the animal mascot, notably for sports teams.
3. According to national reindeer herders administrations in 2000. All figures presented here are rounded and presented for rough orientation only. Data for Russian regions come from regional statistics.

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